

## UTEP and EPISD work together through a GK-12 fellowship

I was so nervous when the important day arrived: one of the questions for the interview to get into the program was “How would you explain your research to a 6<sup>th</sup> grader?” Well,-I thought- The name of my research is nano-patterned polycrystalline CdTe solar cells (sounds easy?). What I said was something like this “imagine that you are a prisoner and you are trapped (electron), when light shines on you, your energy increases and you can be free. Now that you are free you have the task to find your partner (a positive charge) but to do so you have to go through a rough road (load) as quick as you can (electrons flowing) which represent the creation of free electrons in a photovoltaic material when the sun shines on it”. I guess they liked the answers I gave them since three weeks after the interview I got one of the best news in a long time from Jeannine Kennedy (the program coordinator): “you have been chosen a National Science Foundation GK-12 fellow for the 2007-2008 academic year. On behalf of the El Paso GK-12 team I offer my heartfelt congratulations.”

Now the real **thing begun**: when the summer was about to end I got the opportunity to have an extreme week at 110 degrees Fahrenheit (literally). Ten teachers and ten fellows together with the PI's (Dr. Miller, Dr. Hagedorn, and Dr. Johnson) were required to stay one week at Indio Ranch (UTEP's research facility south from Van Horn) in order to perform experiments related to the desert environment. One of the experiments I remember well was to try to figure out the ants behavior when the scorching summer sun was on top of us: Of course the ants weren't there, **their behavior was smart enough!**.

After we completed this week-long adventure, the bond between the teachers and fellows remained strong; we had become good friends. The next week, we attended a workshop at UTEP (in a nicely air conditioned room) that taught us exciting and useful teaching strategies.



NSF-GK12 fellow presenting STEM careers to the kids with hands on activities.



Teachers and fellow performing research in the Chihuahuan desert at UTEP's Indio Ranch.

Now when classes started, a different story was about to happen. About 24 kids per period were looking at me probably thinking, ‘Who is that guy? Why do we have two teachers?’ The formal introduction from the teacher and my presentation weren't enough. After one month the kids finally knew that I was the scientist in the classroom and that my task was to bring experiments down to earth, make the

laboratories more hands on and inquiry-based, and help the teacher explain hard concepts.

That is what NSF GK-12/ UTEP partnership is about. The National Science Foundation, together with the University of Texas at El Paso, have brought together 10 graduate students in different Science, Engineering, and Math (STEM) careers into 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> grades classrooms in El Paso Independent School District with the purpose of extending the interest of the kids into STEM careers by delivering Hands On inquiry based activities directed at understanding and learning about the environment in the borderland.



Middle school girls learning about research done at UTEP (solar cells).



Middle school teachers and graduate students competing showing an engaging way to showing elastic potential energy through catapults.

But GK-12 doesn't end here; it's preparing future professors (now graduate students) to be able to explain science to undergraduate students in a simple and engaging way.

As a SPS member of the Hispanic community born in the states and raised in Mexico I feel the necessity to have Hispanic role models to look after and at the same time I feel proud to represent "mi pueblo" and to be able to serve my El Paso community through this incredible fellowship opportunity.

---

*Jose Luis Cruz-Campa holds a BS in ME and a MS in Physics. Now he is a doctoral candidate at the University of Texas at El Paso in Electrical and Computer Engineering conducting research in solar cells.*

More information about the program can be found at: <http://science.utep.edu/gk12/>